Green Infrastructure: Environmental and Natural Resources

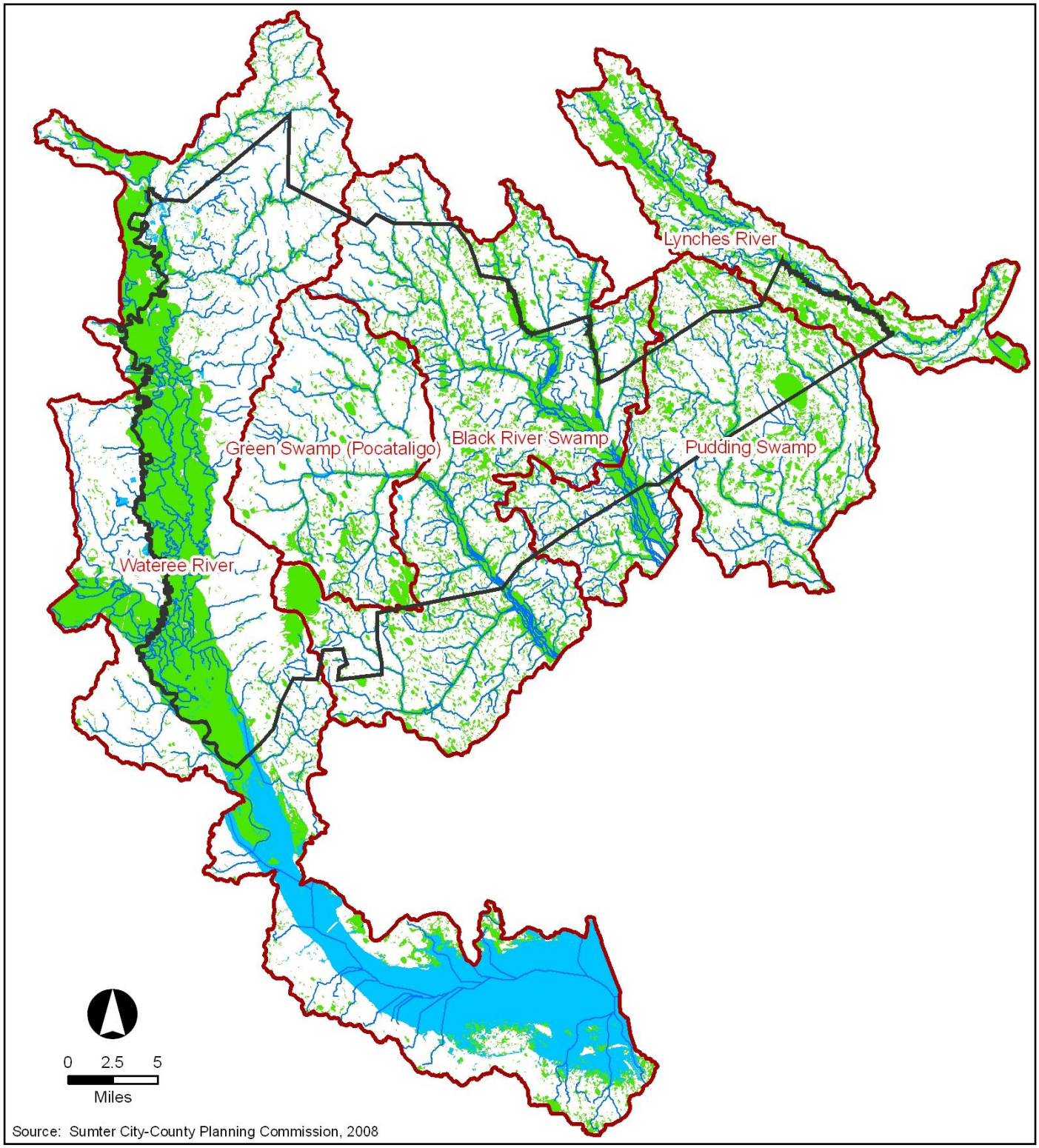
Sumter has a rich abundance of natural resources and environmental features. This broad category, when combined with heritage, active and passive open spaces, forms our "Green Infrastructure" or, a related system of natural resources including but not limited to:

- Jurisdictional, Non-jurisdictional and Isolated Wetlands
- Streams, Rivers, Lakes, Ponds, and Drainage Corridors
- Wildlife Habitat
- Prime Farmland
- Forests and Significant Trees
- Greenways and Trails
- Historic and Archeological sites
- Active, Passive, and other open spaces
- Surface and Groundwater

These elements are tangible assets to the Sumter Community and make Sumter a unique place to live. The interconnectedness of our green infrastructure and the built environment adds value to the character of the community. Open space gives us places to play. Outdoor sports such as hunting and fishing encourage travel and tourism. Stream corridors protect water quality. Wetlands do the same as they harbor individual ecosystems. This plan offers strategies used to guide environmental land use policy: Conservation, Preservation, and Restoration. Moreover, the built environment—development—shall be guided by the principles of ***Conservation Design***: land development which preserves the Green Infrastructure elements while providing for the full development of the site.

Watershed Approach

Traditionally, natural resource management issues, such as stormwater and tree protection, have been limited to site level approaches. However, the impact of any given development affects our community on a larger scale. The "watershed approach" to planning stormwater management, non-point source pollution abatement and other environmental issues can be more economical than working in a "piece meal" fashion. A watershed approach takes into consideration all the problems and solutions in a watershed, all land use categories and soil types, landowners' objectives, and the downstream user needs.



Source: Sumter City-County Planning Commission, 2008

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Natural Resources

Map GI-1
Watersheds

Legend

- County
- Watersheds
- Waterbodies
- Wetlands
- Streams

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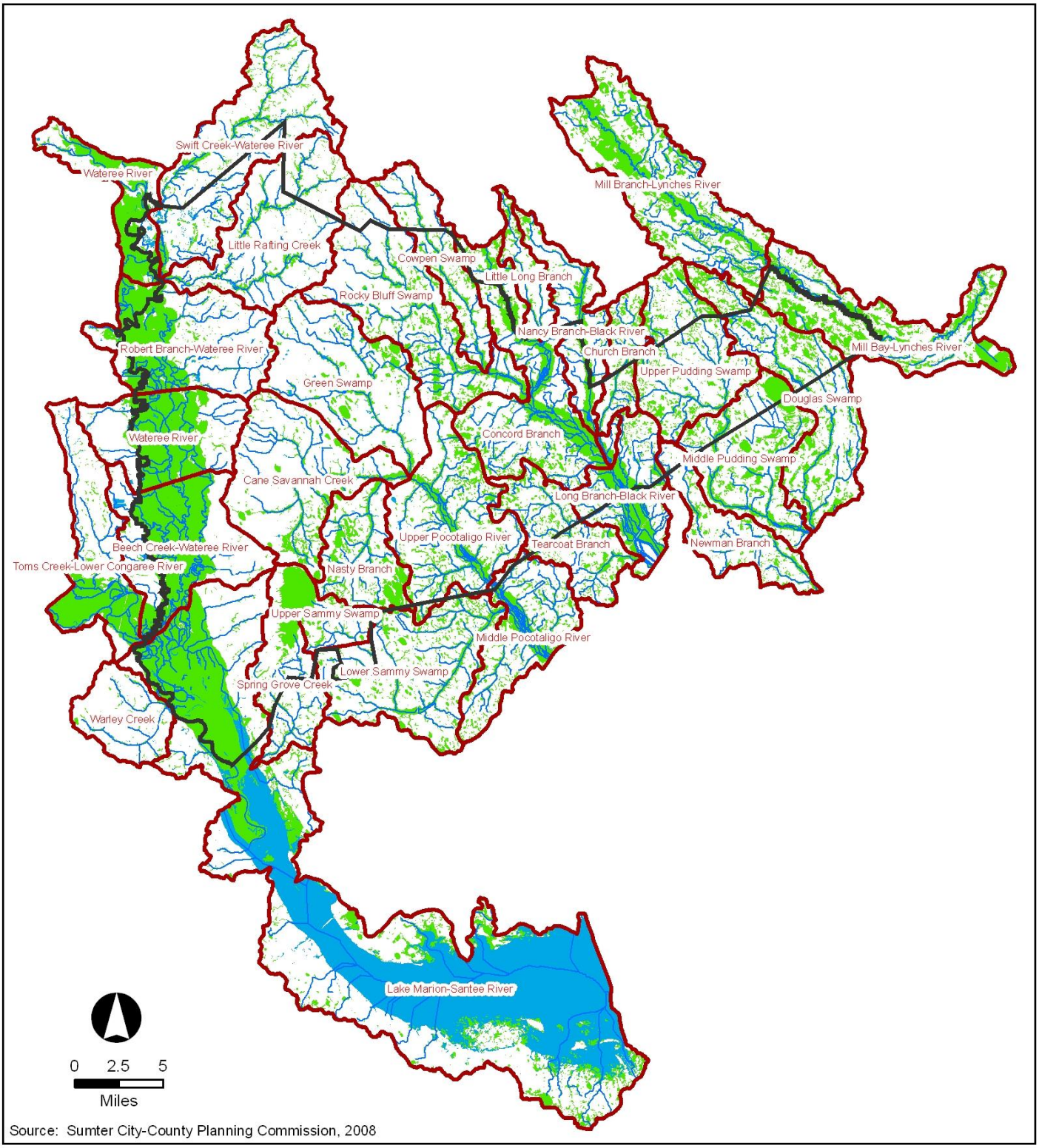

Source: Sumter City-County Planning Commission, 2008

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Natural Resources

Map GI-2
Subwatersheds

Legend

- County
- Subwatersheds
- Waterbodies
- Wetlands
- Streams

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Surface Water (Streams, Lakes, Rivers etc…)

A watershed is all of any geographical area that drains through a common point. There are four major watersheds in Sumter County. Each of these watersheds can be subdivided into smaller "sub" watersheds. Sumter County has abundant surface waters, wetlands and associated flood plains such as: the Wateree River, Black River, Lynches River, Pocotaligo River (Pocalla Swamp), Scape Ore Swamp, Rocky Bluff Swamp, and Santee River. There are numerous perennial and intermittent streams, e.g. Pudding Swamp, Cane Savannah Creek, Nasty Branch, Sammy Swamp, Beech Creek, etc. All of these have associated flood plains and wetlands.

Sumter's river and stream corridors are the most predominant of the Green Infrastructure elements. These natural ecosystems support water quality, animal habitat, forest stands, riparian buffers, and biological diversity. River and Stream Corridors provide immense public benefit filtering stormwater run-off, staging flood waters, recharging groundwater, preserving habitat. These areas provide exceptional economic development, recreational, visual, scenic, and educational opportunities.

Wetlands

Wetlands, vegetated areas where plants are rooted in water or water-saturated soil, serve many functions including but not limited to environment-pollutant removal, flood attenuation, groundwater recharge and discharge, stream bank protection, wildlife habitats, open space preservation, recreation and aesthetics. They have the potential to collect, store and filter stormwater and tolerate flooding for extensive periods of time

Wetlands under federal jurisdiction are subject to U.S. Army Corps of Engineers regulations and are not expressly regulated by local government. Non-jurisdictional and isolated wetlands, such as Carolina Bays, may be protected locally.

Prime Agricultural Lands

Sumter County has a surface area of approximately 436,800 acres. 12,169 acres are permanently covered with water, including: rivers, lakes, ponds, and streams. Approximately 110,000 acres of land in Sumter County are considered "Prime Farmland". Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. This land can be cropland, hay land, pastureland, or forestland, but not urban or "built up" land. In general, prime farmland has an adequate and dependable water supply from rainfall or irrigation, favorable temperatures and growing season, acceptable acidity and/or alkalinity and few or no rocks. Farmland is permeable to water and air and is not excessively erodible or saturated with water for

Source: Sumter City-County Planning Commission, 2008

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Map GI-3
Wetlands

Legend
- County
- Streams
- Waterbodies
- Wetlands

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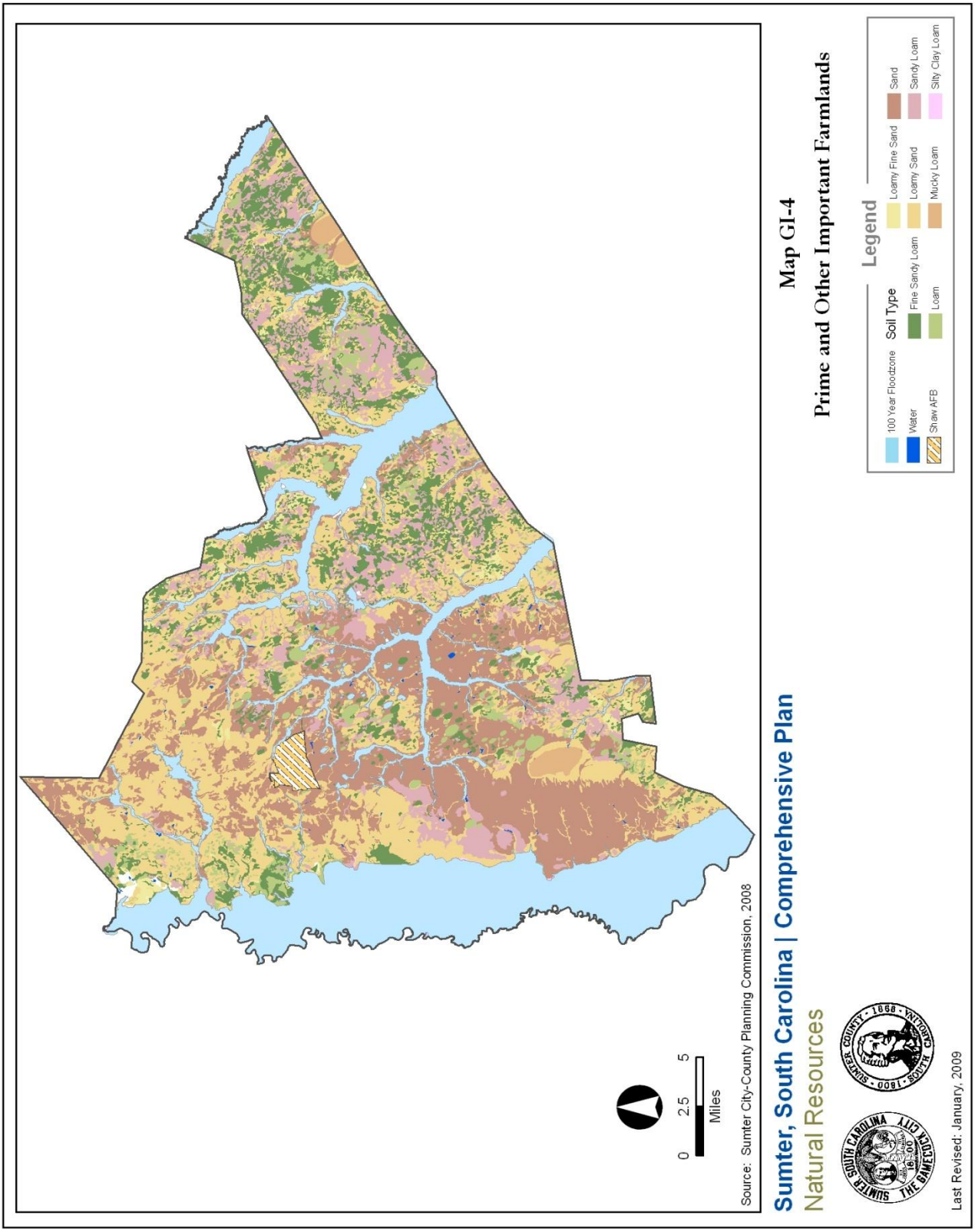
Map GI-4
Prime and Other Important Farmlands
Legend
Soil Type
100 Year Floodzone
Water
Shaw AFB
Loamy Fine Sand
Loamy Sand
Mucky Loam
Fine Sandy Loam
Loam
Sand
Sandy Loam
Silty Clay Loam
0 2.5 5
Miles
Source: Sumter City-County Planning Commission, 2008
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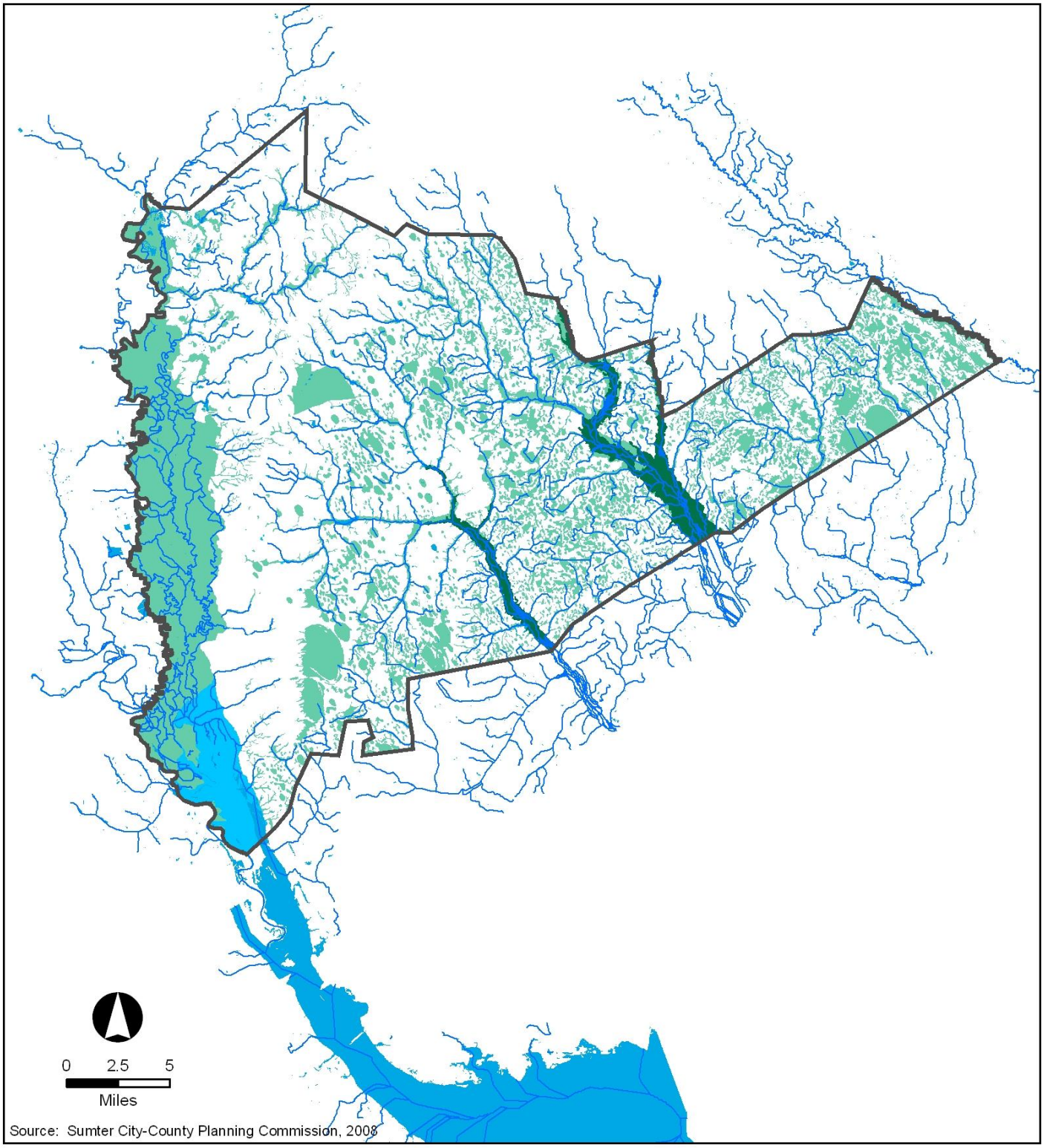

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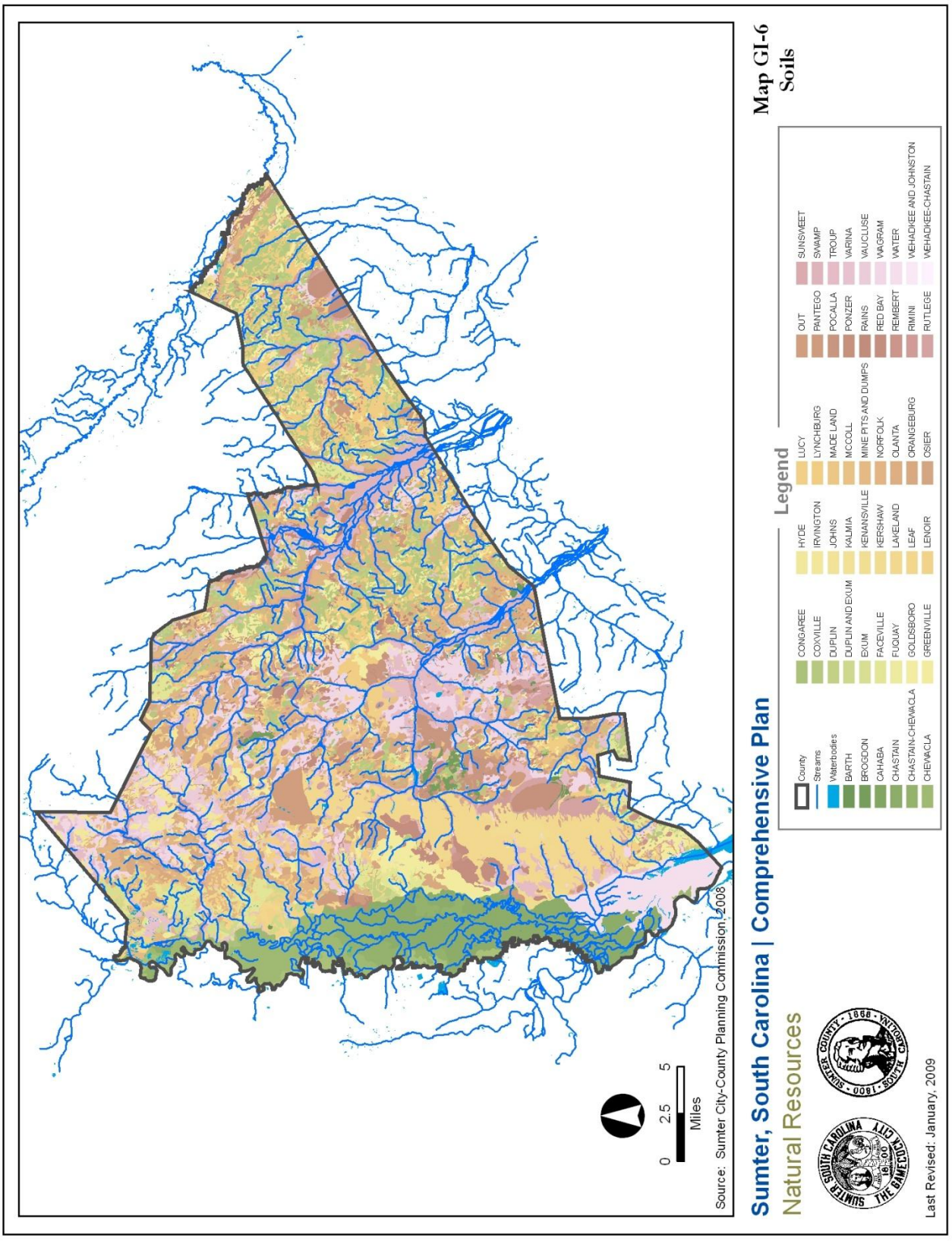
Natural Resources

Map GI-5
Hydric Soils

Legend
- County
- Waterbodies
- Streams
- Swamp
- Hydric Soils

Last Revised: January, 2009


Map GI-6
Soils
Legend
County
Streams
Waterbodies
BARTH
BROSDON
CAHABA
CHASTAIN
CHASTAIN-CHEWACLA
CHEWACLA
CONGAREE
COXVILLE
DUPLIN
DUPLIN AND EXUM
EXUM
FACEVILLE
FUQUAY
GOLDSBORO
GREENVILLE
HYDE
IRVINGTON
JOHNS
KALMIA
KENANSVILLE
KERSHAW
LAKELAND
LEAF
LENOIR
LUCY
LYNCHBURG
MADE LAND
MCCOLL
MINE PITS AND DUMPS
NORFOLK
OLANTA
ORANGEBURG
OSIER
OUT
PANTEGO
POCALLA
PONZER
RAINS
RED BAY
REMBERT
RIMINI
RUTLEGE
SUNSWEET
SWAMP
TROUP
VARINA
VAUCLUSE
WAGRAM
WATER
WEHADKEE AND JOHNSTON
WEHADKEE-CHASTAIN
0 2.5 5
Miles
Source: Sumter City-County Planning Commission, 2008
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a long period of time, and they either do not flood frequently or are protected from flooding.

Agriculture in Sumter County is a $91,831,000 per year (2005) industry, the third largest agricultural economy by county in the state. These soil characteristics that make land prime farmland also make it attractive for development. There are few if any site limitations to overcome to locate industrial, commercial or residential projects and associated infrastructure on site. Once a field has been devoted to development, it is nearly impossible and, not economically feasible, to return it to agricultural use. At present, total land devoted to row-crop production - soybeans, corn, wheat, cotton, peanuts and others - is fairly stable. Major soil erosion is not a problem. Uncontrolled runoff from agricultural fields can carry soil particles, animal wastes, pesticides and/or fertilizers. These contaminants can cause problems on adjacent land through erosion, flooding, or deposition problems and with receiving water bodies by siltation, excessive nutrient enrichment, increased water turbidity, lower dissolved oxygen content, etc. Many landowners have voluntarily applied conservation measures on their lands to prevent such occurrences.

Soil surveys, as a planning tool for developers and homeowners, should be encouraged at all levels. Problems associated with trying to use a parcel of land outside of its inherent capabilities are numerous and sometimes very costly to correct after a land use conversion has occurred. Proper planning is vital to maintain the quality of our natural resources as well as protect financial investments made by the citizens and businesses in Sumter County.

During the planning process the limitations of the Sumter County Soil survey should be kept in mind. The Soil survey is an invaluable tool for large- and medium-size planning activities. However, specific sites should have a thorough investigation performed prior to committing to a particular use for a parcel of land.

Sumter County, the City of Sumter, and the Town of Mayesville have all passed Local Stormwater Management and Sediment Reduction Ordinances. The Sumter County Soil and Water Conservation District has written to SC DHEC seeking delegation of all aspects of the State Stormwater Management and Sediment Reduction law. When construction sites are not developed properly, large amounts of water and soil can leave the site, not only causing problems on site, but offsite as well.

Groundwater

All Sumter residents get their drinking water from groundwater (wells) either through individual wells or via public water providers. The City of Sumter has recently commissioned a professional study of the groundwater aquifer system to ensure that adequate water is available and that the aquifers are sufficient to supply the community

for years to come. The SC DNR Water Resources Division has developed a State Water Plan. Local officials should stay abreast of this plan as it is finalized and changes are made. It is possible that new rules will be proffered regulating withdrawals and that "critical levels" in all of our aquifers will be established, as the development of a State Water plan continues to evolve. Our underground aquifers (see attachments 2 - 5) are slow to recharge. Once drawn down, they are difficult to get back to original levels. Also, once polluted, they will be extremely costly, if feasible at all, to clean up.

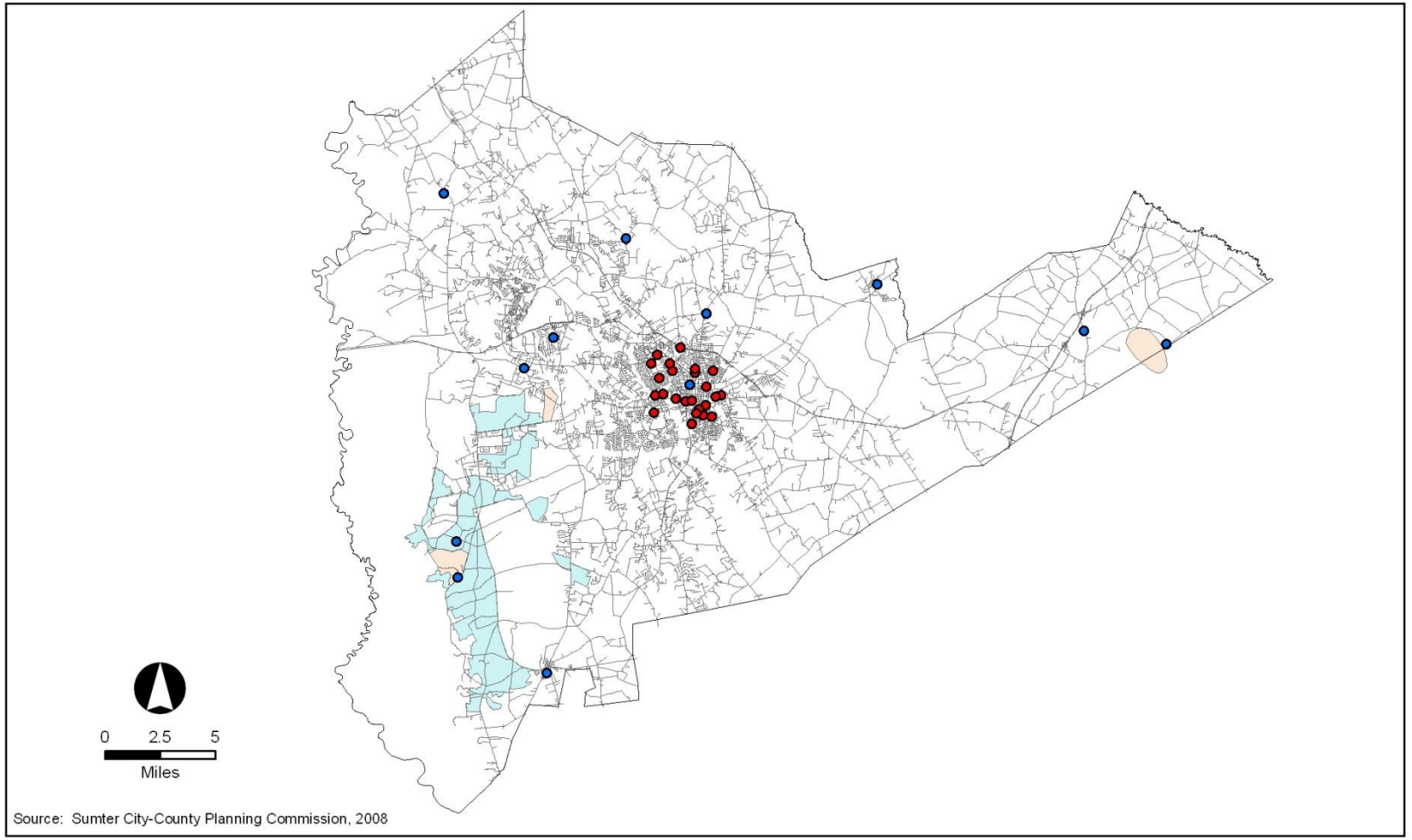
Much of the low density development (residential lots generally on a half acre and above) in the Sumter community takes place on private water and sewer systems, i.e. well and septic. In fact, recent DHEC permits allow septic systems on parcels less than 20,000 square feet in size. This pattern of higher density and septic systems can potentially lead to groundwater contamination issues. Consideration should be given to higher minimum lot sizes for private well and septic systems.

Natural Habitat and Recreation Areas

In addition to the natural areas and habitat associated with stream, river, and wetland ecosystems, Sumter County contains a number of natural recreation areas: Manchester State Forest, Poinsett State Park, Mill Creek State Park, and Woods Bay State Park. These areas are managed by the state and contain some very unusual forest types. In Poinsett, for example, mountain laurel and rhododendron are common in this natural environment. In Big Bay, near Pinewood, a rare community of White Cedar exists. This is now a part of the Poinsett weapons range controlled by the US Department of Defense, and Shaw AFB. Shaw AFB is also planning to plant some additional areas of Atlantic White Cedar. Shaw Air Force Base property also has large stands of long-leaf pine forest habitat, a habitat unique to the southeast region of the United States that has declined from around 60 — 90 million acres to about 3 million acres. There are over 30 threatened and endangered species of plants and animals that are dependent on long-leaf pine habitat for their existence. Shaw Air Force Base also has a red-cockaded woodpecker colony, an endangered species.

Wildlife is abundant in Sumter County. White-tailed deer, turkey, dove, quail, ducks, geese, and rabbits are the most popular species for sportsmen. There has been an increase in the number of people who also enjoy watching wildlife and not hunting. Leasing of hunting rights has become an important source of income for numerous landowners and is predicted to increase in future years as large, natural tracts of land (capable of being hunted) are decreasing in number. Hunting and fishing is an important industry in Sumter County. Over 14,000 hunting and fishing licenses were sold to Sumter County residents in 2007.

There are programs available to assist landowners to improve their land for wildlife habitat. Quail and waterfowl are two target species that have been in greatest decline in



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Map GI-7

Parks & State Land

Legend

- County
- State Forest
- State Park
- City Parks
- County Parks

recent years and management activities to benefit these species are encouraged by SC DNR, US Fish and Wildlife Service, and USDA NRCS.

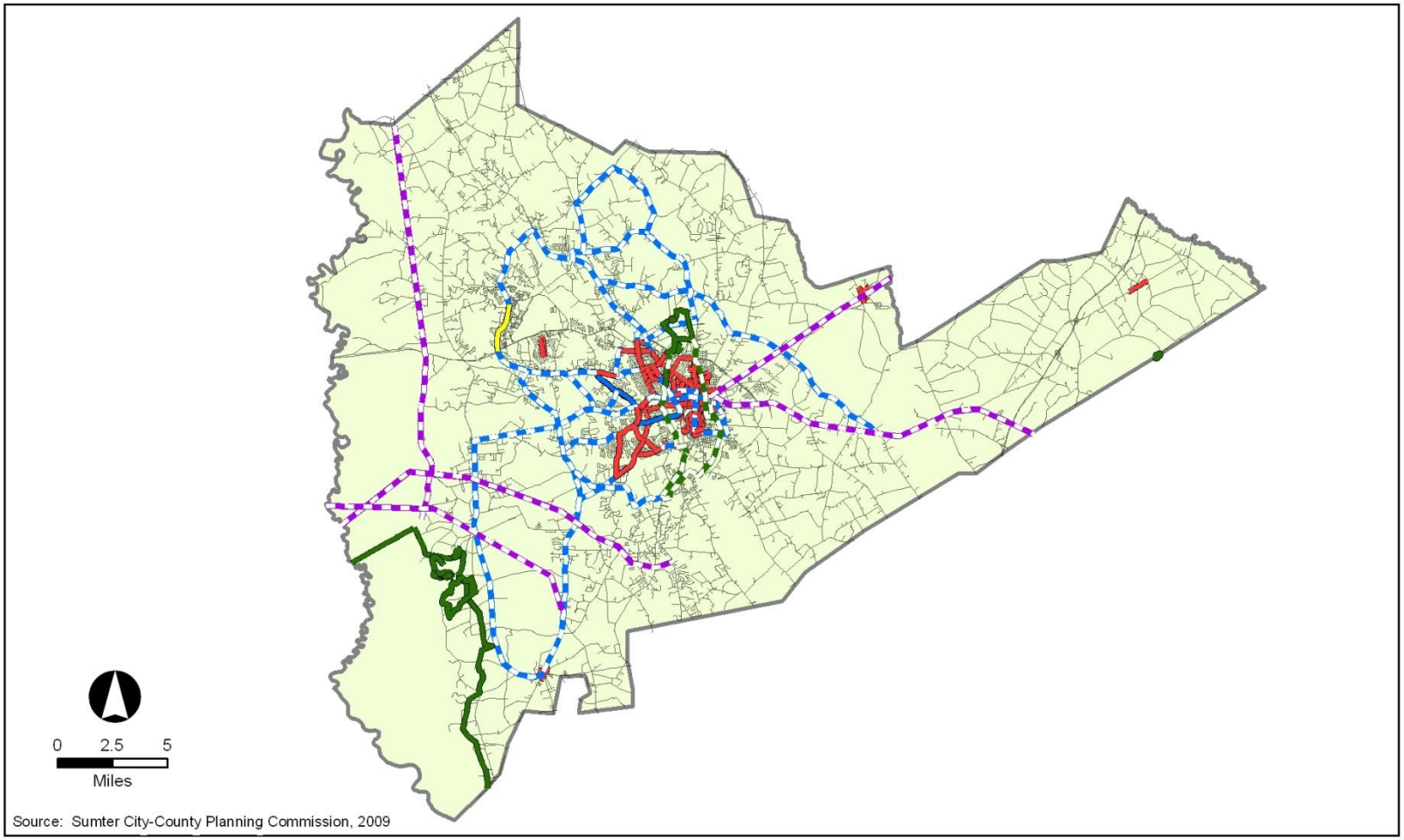
Mineral Resources

Two types of "mineral resources" are commercially mined in Sumter County. Gravel is mined in the northwestern portion of the county, and clay is mined at various locations. Fuller's Earth, a kaolinitic type of clay, used primarily in kitty litter was commercially mined for years in the extreme southwestern part of Sumter County. This mine site is now the location of Safety-Klean (formerly Laidlaw Environmental, a hazardous waste landfill). The location of this landfill causes some citizens and environmental groups great concern due to its proximity to the Santee Cooper Lakes System (Lake Marion). With plans to start using the Santee Cooper Lakes as a source of drinking water, concerns about this landfill continue to be expressed.

Sustainability

The Sumter Community has begun a public conversation regarding climate change, environmental stewardship, energy savings, and the broad concept of "sustainability." Particularly relevant to land use and development, sustainable means meeting the needs of the community today without compromising the ability of future residents to meet their own needs. Basically, the goal of a sustainable Sumter involves public and private commitments to recycling, energy reduction, resource protection, and a reduction of human impact on our natural environment.

Green infrastructure is an important component of developing a sustainable, liveable community. This plan identifies existing greenspace, parks, trails, streams and sidewalks along with potential connections to link all of Sumter County in one network. This will serve the demand for both active and passive recreation, pedestrian and bicycle transportation and provide our community with a "necklace" of greenspace. Employing the principles of ***Conservation Design***, comprehensive plan policies serve as a guide to preserve open space and critical ecological features, encourage development in already degraded areas and use land more efficiently.



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Last Revised: February, 2009

Map GI-8

Bicycle & Pedestrian Facilities

Legend

- Existing Trails
- Proposed Trails
- Additional Proposed Bicycle and Pedestrian Facilities
- Existing Sidewalk
- Proposed Sidewalk
- Existing Bicycle Facilities
- Proposed Bicycle Facilities

Green Infrastructure Policies

It is the stated policy of the City of Sumter and Sumter County that the following guidance shall be considered when evaluating any land development application:

1. All land development projects shall protect environmental resources whenever possible through the use of conservation design techniques—essentially identifying the green infrastructure, and then designing around those resources.

2. Environmental setbacks and buffering will be strongly encouraged. Development is expected to respect sensitive environmental features by not encroaching or building directly up against those features.

3. Where logical, green infrastructure features should be left in their natural state, untouched, except for passive recreation uses such as trails.

4. Open space, including but not limited to passive areas, parks, playgrounds, ball fields, pedestrian trails, and water features shall be *intentionally* incorporated into all development projects. Further, connecting a City and Countywide network of Green Infrastructure is a primary policy initiative.

5. The City and County support ongoing progress toward greater community sustainability, through improved energy savings, environmental resource protection, recycling efforts, fleet management, and the reduction of Sumter's overall environmental footprint.